

# Teaching 50,000 Words and Erasing a 30,000 Million Word Deficit Faced by Some Children

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Mike Graves, Univ of Minn

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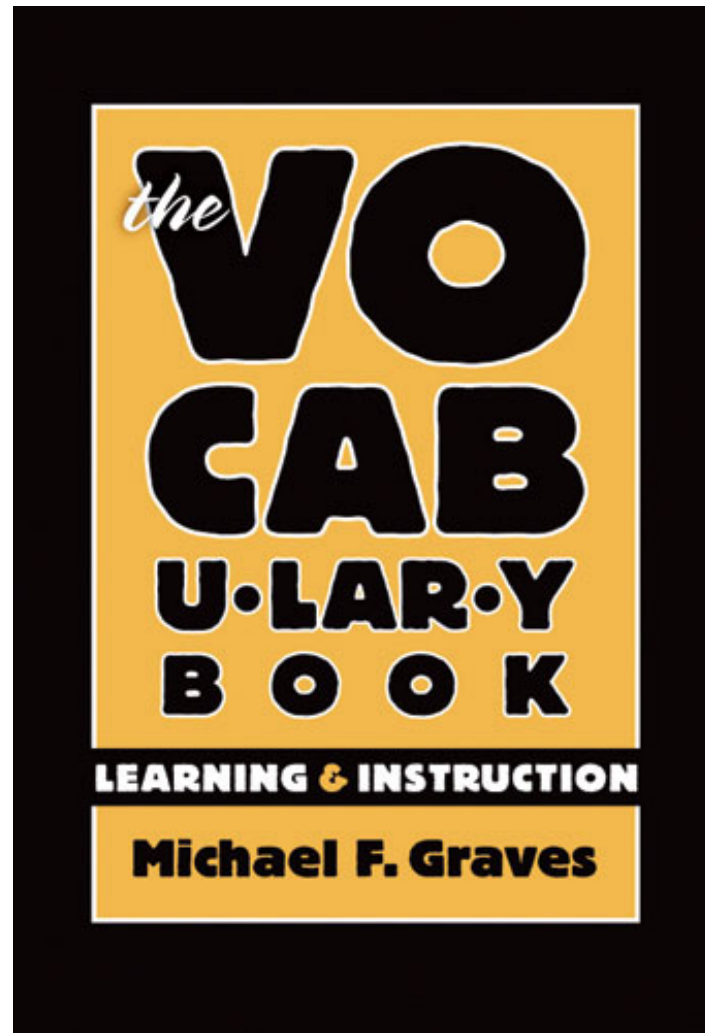
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# **Teaching Individual Words**

One Size

Does Not Fit All

Michael F. Graves

# Major Points

- Vocabulary is tremendously important.
- The vocabulary learning task is huge.
- Some students come to school with debilitating small vocabularies.
- Any program likely to succeed will need to be multifaceted and long term.
- When it comes to teaching individual words, one size does not fit all.

## Some Specifics on the Importance of Vocabulary (1)

- Vocabulary knowledge is a crucial factor underlying reading comprehension and thinking more generally (Davis, 1944; Stahl & Stahl, 2004; Thorndike, 1973-1974; Wittgenstein, 1953).
- Vocabulary knowledge is one of the best indicators of verbal ability (Sternberg, 1987; Terman, 1916).
- Vocabulary knowledge in kindergarten and first grade is a significant predictor of reading comprehension in the middle and secondary grades (Cunningham & Stanovich, 1997; Scarborough, 1998).
- Vocabulary difficulty is the most powerful factor influencing the readability of text (Chall & Dale, 1995; Klare, 1984).
- Teaching vocabulary can improve reading comprehension for both native English speakers (Beck, Perfetti, & McKeown, 1982) and English learners (Carlo et al., 2004)

## Some Specifics on the Importance of Vocabulary (2)

- Growing up in poverty can seriously restrict the vocabulary children learn before beginning school and make attaining an adequate vocabulary a very challenging task (Coyne, Simmons, & Kame'enui, 2004; Hart & Risley, 1995).
- Less advantaged students are likely to have substantially smaller vocabularies than their more advantaged classmates (Templin, 1957; White, Graves, & Slater, 1990).
- Lack of vocabulary can be a crucial factor underlying the school failure of disadvantaged students (Becker, 1977; Biemiller, 1999).
- Learning English vocabulary is one of the most crucial tasks for English learners (Folse, 2004; Nation, 2001).

# The Vocabulary Learning Task Is Huge

- The average third grader knows something like 15,000 words.
- The average sixth grade student knows something like 25,000 words.
- The average high school graduate knows something like 50,000 words.
- This means that average students learn roughly 3,000 words a year.
- This translates to 8 words a day, 7 days a week, 52 weeks a year□with no time off for weekends, summers, or good behavior.

# Some Students Have Markedly Smaller Vocabularies

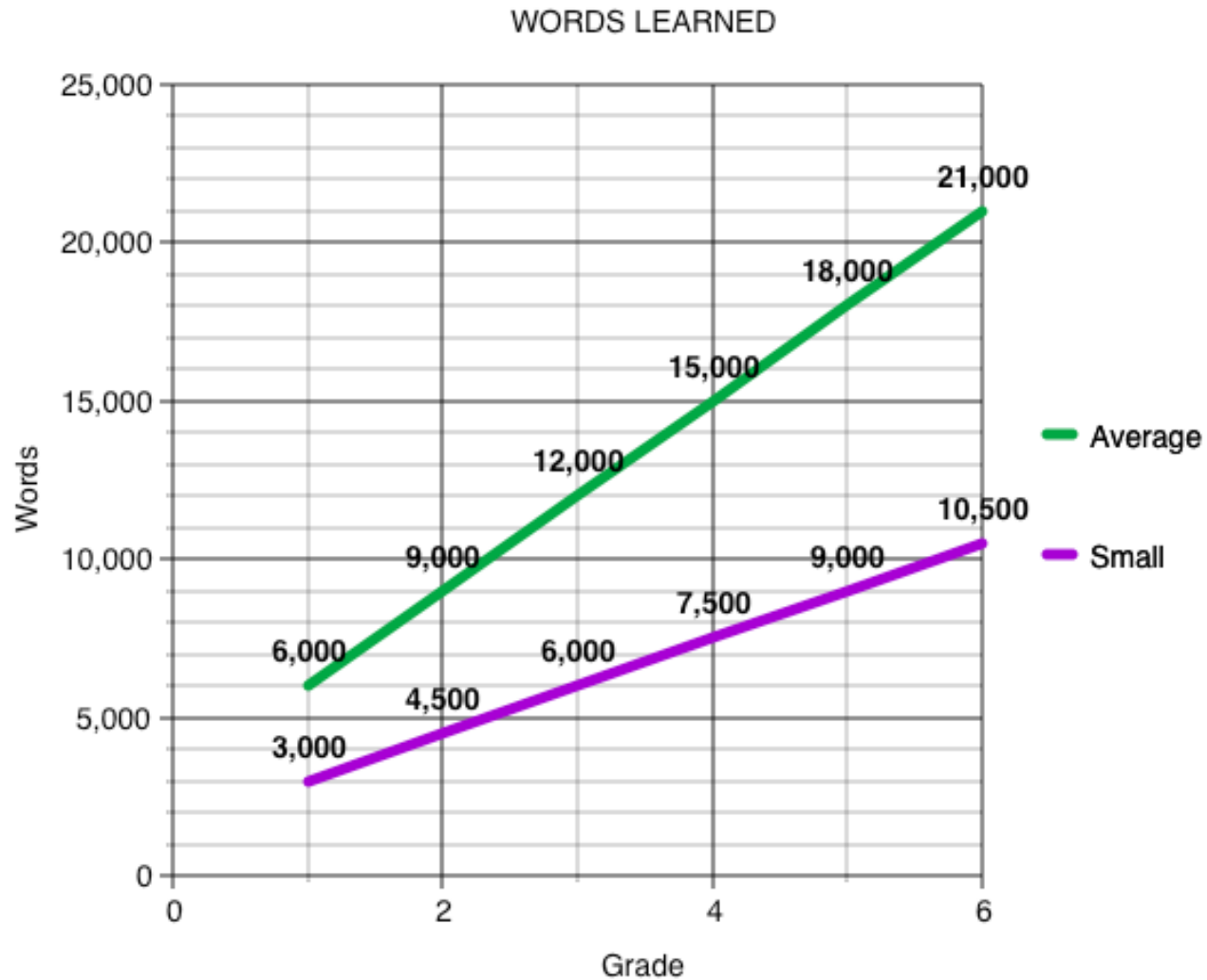
- Students who may have markedly smaller vocabularies include students of poverty, students who struggle with reading, and English-language learners.
- Hart and Risley (1995, 2003) estimate that by age 3, some less advantaged students have heard 30 million fewer words than their more advantaged peers.
- Hart and Risley further estimate that these students' vocabularies may be half the size of those of their more advantaged counterparts, and that closing this gap is a huge task.



# What It Would Take To Close the Gap

- Suppose that students with average vocabularies come to school knowing 6,000 words.
- Suppose further that those with smaller vocabularies come to school knowing 3,000 words.
- A year later, students with average vocabularies would have vocabularies of  $6,000 + 3,000 = 9,000$  words.
- Without some kind of intervention, students with smaller vocabularies would have vocabularies of  $3,000 + 1,500 = 4,500$  words.
- In other words, without intervention the vocabulary gap will continue to grow.
- In order to close that gap, the vocabularies of the students with small vocabularies must grow more than twice as fast as they did in the past.

# What Happens if the Gap Isn't Closed



# A Program Powerful Enough to Promote Such Increased Growth Must Clearly Be Multifaceted and Long-Term

- By multifaceted, I mean a program that assists students in learning new words in several different ways.
- By long term, I mean a program that lasts not for weeks, not for months, but for years.
- How many years we do not know, but it is clear that students with very small vocabularies are going to need years rather than months to catch up with their peers.
- For first graders who enter schools with very small vocabularies, 3 years seems a minimal estimate. For older students, it is likely to take even longer.

## A Multifaceted Vocabulary Program

Listed below are the four parts of a multifaceted vocabulary program that I describe in *The Vocabulary Book*. It is similar to programs described by Baumann & Kaméenui (2004), Blachowicz, Fisher, Ogle, & Watts-Taffe (2006), and Stahl & Nagy (2006) and was recently validated in a study by Baumann, Ware, & Edwards (2007).

- Frequent, varied, and extensive language experiences
- Teaching individual words
- Teaching word learning strategies
- Fostering word consciousness

# Frequent, Varied, and Extensive Language Experiences

- Reading, writing, discussion, and listening
- The emphasis on these four modalities and the teaching/learning approaches used will vary over time.
- With younger and less proficient readers, there is more discussion and listening and more teacher-led work.
- With older and more proficient readers, there is more reading and writing and more independent work.

## Frequent, Varied, and Extensive Language Experiences (con□t)

- With younger and less proficient readers, it is important to realize that vocabulary growth must come largely through listening and discussion and not through reading.
- Shared book reading is currently the most widely suggested and widely documented strategy for building students' oral vocabularies. Dialogic Reading (Zevenbergen & Whitehurst, 2003), Direct and Intensive Instruction (Biemiller, 2004), and Text Talk (Beck & McKeown, 2001, 2007) are four theoretically sound and empirically tested approaches.
- Teaching 4,000 Words (Sales & Graves, 2007) is a related, individualized, computer-based approach a colleague and I are beginning to investigate.

## Some Characteristics of Effective Shared Book Reading

- Both the adult readers and children are active participants.
- Involves several readings
- Focuses attention on words
- The reading is fluent, engaging, and lively.
- Deliberately stretches students and scaffolds their efforts
- Employs carefully selected words and books

## Sales and Graves Plan for Teaching 4,000 Words

- A proposed program for ensuring that students in grades 1-4 can read the most frequent 4,000 English words (Sales & Graves, 2007)
- Targeted at ELLs, struggling readers, and children of poverty with small vocabularies.
- Will use a multimedia system including voice recognition to diagnose individual student's knowledge of the most frequent words and begin teaching unknown words at the frequency level at which the student knows less than 90 percent of them.
- The final program will include (1) individualized Web-based instruction presented on the computer, (2) a Web-based monitoring and record keeping system for teachers, and (3) a DVD-ROM to train teachers to use the program



## What It Means to Know the Most Frequent 4,000 Words

- The words we are teaching are 3,913 word families (base words and their common inflected forms) taken from a list developed by Hiebert (2005). Hiebert divided the words into four “zones”: the first 300 words, the next 500 words, the next 1,200 words, and the final 2,000 words.
- The value of knowing these words is shown in the next four slides, which show a passage from a biography written for upper elementary students and the words that would be familiar to students who knew (1) only the 300 words in Zone 1, (2) the 800 words in Zones 1-2, the 2,000 words in Zones 1-3, and the 4,000 words in Zones 1-4.

(1) Knowing only the 300 words in Zone 1, a student could read only the words shown here.

Could it be an \_\_\_\_\_? The year before, \_\_\_\_\_ had seen one for the first time when his mother took him to a \_\_\_\_\_ in \_\_\_\_\_, \_\_\_\_\_. He had \_\_\_\_\_, \_\_\_\_\_, as the \_\_\_\_\_ a \_\_\_\_\_ by \_\_\_\_\_ on the \_\_\_\_\_ of a \_\_\_\_\_ that was \_\_\_\_\_ on the \_\_\_\_\_. Now \_\_\_\_\_ an \_\_\_\_\_ was right here in \_\_\_\_\_, and about to \_\_\_\_\_ over his house.

Not \_\_\_\_\_ to \_\_\_\_\_ a thing, \_\_\_\_\_ the \_\_\_\_\_ and \_\_\_\_\_ up the \_\_\_\_\_ of the house to its \_\_\_\_\_. From there he had a good \_\_\_\_\_ of the \_\_\_\_\_, \_\_\_\_\_ the place. And in the \_\_\_\_\_, \_\_\_\_\_ ever \_\_\_\_\_, he saw the \_\_\_\_\_.

(2) Knowing the 800 words in Zones 1 and 2, a student could read the words shown in this version.

Could it be an \_\_\_\_\_? The year before, \_\_\_\_\_ had seen one for the first time when his mother took him to a \_\_\_\_\_ in \_\_\_\_\_, \_\_\_\_\_. He had watched, \_\_\_\_\_, as the \_\_\_\_\_ gave a \_\_\_\_\_ by \_\_\_\_\_ on the \_\_\_\_\_ of a \_\_\_\_\_ that was \_\_\_\_\_ on the ground. Now maybe an \_\_\_\_\_ was right here in \_\_\_\_\_, and about to \_\_\_\_\_ over his house.

Not \_\_\_\_\_ to \_\_\_\_\_ a thing, \_\_\_\_\_ opened the window and \_\_\_\_\_ up the \_\_\_\_\_ of the house to its \_\_\_\_\_. From there he had a good view of the \_\_\_\_\_ River, \_\_\_\_\_ past the \_\_\_\_\_ place. And in the sky, coming ever \_\_\_\_\_, he saw the \_\_\_\_\_.

(3) Knowing the 2,000 words in Zones 1-3, a student could read the words shown in this version.

Could it be an airplane? The year before, Charles had seen one for the first time when his mother took him to a flying \_\_\_\_\_ in \_\_\_\_\_, Virginia. He had watched, \_\_\_\_\_, as the \_\_\_\_\_ gave a \_\_\_\_\_ by \_\_\_\_\_ oranges on the \_\_\_\_\_ of a \_\_\_\_\_ that was \_\_\_\_\_ on the ground. Now maybe an airplane was right here in \_\_\_\_\_, and about to fly over his house.

Not \_\_\_\_\_ to \_\_\_\_\_ a thing, Charles opened the window and climbed up the \_\_\_\_\_ roof of the house to its \_\_\_\_\_. From there he had a good view of the \_\_\_\_\_ River, \_\_\_\_\_ past the \_\_\_\_\_ place. And in the sky, coming ever closer, he saw the plane.

(4) Knowing the 4,000 words Zones 1-4, a student would be able to read everything in the version below that is not in grey.

Could it be an airplane? The year before, Charles had seen one for the first time when his mother took him to a flying exhibition in Fort Myer, Virginia. He had watched, enthralled, as the pilot gave a bombing demonstration by dropping oranges on the outline of a battleship that was traced on the ground. Now maybe an airplane was right here in Minnesota, and about to fly over his house.

Not wanting to miss a thing, Charles opened the window and climbed up the sloping roof of the house to its peak. From there he had a good view of the Mississippi River, flowing languidly past the Lindbergh place. And in the sky, coming ever closer, he saw the plane.

## First 4,000 Words Opening Screen



## First 4,000 Words Cozy Cave



# Possible Titles for First 4,000 Words Program

Vocabitat

Jump Start

Vocabulary 4,000

Fast Forward

Vocabulary Quest



# Teaching Individual Words

- There are many more words that might be taught than you can possibly teach, so you need to decide which words to teach.
- There are various word learning tasks students face, and different word-learning tasks require different kinds of instruction.
- There are various levels of word knowledge, and these require different kinds of instruction.
- There are many methods of teaching words.
- Different methods are appropriate for different circumstances.

## Some Characteristics of Effective Instruction for Individual Words

- Instruction that involves both definitional information and contextual information is markedly stronger than instruction that involves only one of these.
- Instruction that also involves activating prior knowledge and comparing and contrasting meanings is stronger still.
- More lengthy and more robust instruction that in addition to the above involves students in actively manipulating meanings, making inferences, searching for applications, prior knowledge, and frequent encounters is still stronger.
- Stronger vocabulary instruction takes more time, and with the number of words to be learned we very often do not have more time.

# When Teaching Individual Words, One Size Instruction Does Not Fit All!

- Because of the different word-learning tasks. For example, learning a new label for an existing concept is very different than learning a new and difficult concept.
- Because there are different levels of word knowledge we can give students. Learning a tentative or basic meaning is much different from learning a rich and full meaning.
- Because there are simply too many words to teach to provide rich and powerful instruction for all of them.

## Providing Student-Friendly Definitions: A Key to Any Method of Teaching Individual Words

Providing student-friendly definitions—ones that are accurate and that students will understand—is no mean task. Below are a definition of *dazzling* from the dictionary on my computer and a student-friendly definition from Beck, McKeown, and Kucan (2003).

“bright enough to deprive someone of sight temporarily”

“If something is dazzling, that means that it’s so bright that you can hardly look at it.”

The *Collins COBUILD New Student’s Dictionary* (Harper-Collins, 2006) and the *Longman Study Dictionary of American English* (2006) provide many excellent examples of student-friendly definitions.

# Some Approaches To Teaching Individual Words

The following 7 approaches are a sample of the fifteen or so approaches described in *The Vocabulary Book* and 25 or so described in *Teaching Individual Words*. I would classify the first 4 as Introductory and the last 3 a Rich and Powerful.

- Providing glossaries
- Using pictures
- Context/dictionary/discussion
- Context/relationship
- Vocabulary visits
- Robust instruction
- Frayer method

## Providing glossaries

Probably the least time-consuming and least intrusive thing you can do to assist students with the vocabulary of selections they are reading is to provide glossaries of important terms.

*tsu-na-mi.* A large wave that can occur after an underwater earthquake

## Using Pictures

Sometimes a picture is worth a thousand words.

avalanche. An avalanche occurs when a large mass of snow and rock slide very rapidly down a mountain. They can be very destructive.

The owners of ski resorts do everything possible to avoid the dangers of avalanches.



## Context/Dictionary/Discussion Procedure

Give students the word in context.

For example, *admire* “We *admire* the paintings of great artists at the museum.”

Ask them to look it up in the dictionary.

Discuss the definitions they come up with.



## Context-Relationship Procedure

Create a brief paragraph that uses the target word three or four times. Follow the paragraph with a multiple-choice item that checks students' understanding of the word.

1. Explain the purpose of the procedure.
2. Pronounce the word to be taught.
3. Read the paragraph in which the word appears.
4. Read the possible definitions, and ask students to choose the best one.
5. Pause to give students time to check a definition, give them the correct answer, and answer any questions students have.
6. Read the word and its definition a final time.

## Context-Relationship Procedure Example

### *Gathered*

The children *gathered* eggs from the henhouse. Then they put the eggs in a basket. *Gathering* eggs was something they did every day when they visited their grandmother's farm. *Gathered* means that a person picks up and collects something.

*Gathered* means

- ☐ A. dropping things.
- ☐ B. picking up things.
- ☐ C. sharing ideas.

# Vocabulary Visits

- Model the instruction on the plan and activities of a field trip.
- Identify a topic, thematically oriented informational texts, and key words.
- Choose a photo to stimulate discussion and anchor a large poster.
- Have students list the words they know about the topic and put them on the poster.
- Take a field trip using the poster: Ask students for words they see, hear, and feel. Put them on the poster on post-its, grouping related words.
- Read sections of the books aloud. Have kids give "thumbs up" when they hear one of the words. Add key words to the poster as necessary.
- Finish the books. Reorganize words as seems appropriate
- Do extension activities like word games, sorting, writing, and reading new topically related books.
- Evaluate with such activities as listing words and writing summaries of the books, plays, or poetry that focus on the topic.

## Vocabulary Visits: Some “Skeleton” Words Taught

bone

skull

leg

arm

wrist

ankle

foot

ribs

brain

spine

backbone

protect

## Vocabulary Visits: Number of Words Learned

Student	Before V V	After V V
1	8	20
2	7	23
3	4	6
4	6	23
5	7	27
6	4	32
7	4	13
8	7	8
9	5	10
10	7	26
11	3	10
12	4	18
13	5	11
14	5	11
15	0	6
16	0	6
17	0	14
18	0	19

## Robust Instruction

Begin with a student-friendly definition.

Have students work with the word more than once.

Provide the word in more than one context.

Engage students in activities in which they deal with various facets of the target word's meaning and with investigating relationships between the target word and other words.

Have students create uses for the word.

Encourage students to use the word outside of class.

(Beck, McKeown, & Kucan, 2002)

# Frayer Method: A Method Specifically Designed to Teach Challenging Concepts

Define the new concept.

Distinguish between the new concept and similar concepts it might be confused with.

Give examples, and explain why they are examples.


Give non-examples, and explain why they are non-examples.

Present students with examples and non-examples, and ask students to distinguish between them.

Have students present examples and non-examples, explain why they are one or the other, and provide feedback.

(Frayer, Frederick, & Klausmeier, 1969).

# Some Things Not to Do in Teaching Individual Words

 Merely mentioning word meanings and assuming that you have therefore taught them

 Giving students words out of context and asking them to look up the words in the dictionary

 Asking students to use context before teaching them how to do so

 Doing speeded trials with individual words

 Giving students only a definition or only the word in context



# Teaching Word-Learning Strategies

- Using context
- Learning and using word parts
- Using glossaries and the dictionary
- Recognizing and using cognates (for Spanish speakers)

# Some Suggestions on Teaching Word-Learning Strategies

Most students will not learn to effectively use these strategies without significant amounts of time and effort on both their part and yours.

Teaching strategies is going to take weeks, not days, and it will require significant amounts of review and practice.

My experience is that the most effective approach is a combination of direct explanation and some more constructivist elements.

## Direct Explanation

- An explicit description of the strategy and when and how it should be used
- Teacher and/or student modeling of the strategy in action
- Collaborative use of the strategy in action
- Guided practice using the strategy with gradual release of responsibility
- Independent use of the strategy

(Duke & Pearson, 2002)

# Some Elements of Constructivist Instruction

- Make motivation a prime concern.
- Explain and discuss the value of strategies.
- Provide lots of collaborative discussion of the thinking behind the strategies.
- Extend practice, encouragement, and feedback over considerable time.
- Continually work on transfer.
- Encourage student reflection and planning.

(Pressley, Harris, & Marks, 1992)

# Fostering Word Consciousness

The term “word consciousness” refers to an awareness of and interest in words and their meanings (Graves & Watts-Taffe, 2002). Word consciousness integrates metacognition about words, motivation to learn words, and deep and lasting interest in words.

- Although fostering word consciousness differs from grade to grade, doing so is vital at all grade levels.
- There are some time consuming word consciousness activities, but for the most part fostering word consciousness does not take a lot of your time or your students' time.

# Some Types of Word Consciousness Activities

- Creating a Word-Rich Environment
- Recognizing and Promoting Adept Diction
- Promoting Word Play
- Fostering Word Consciousness Through Writing
- Involving Students in Original Investigations
- Teaching Students about Words

(Graves & Watts-Taffe, 2007)

## A Wonderful Word Wall

- A year long activity developed by Janice Hadley (2004), a third/fourth grade teacher from the Washington DC area, and described by Peter Dewitz, a Virginia reading consultant
- Students selected their own words, introduced them to the class, and put them on 3 x 5 cards on the wall weekly.
- Other students could attach sentences or definitions to the cards.
- The words eventually became a chain that circled the room twice and contained over 200 words by December and over 400 by the end of the year.
- Students paired up and “walked the wall” twice a week, quizzing each other on words, defining them, and talking about them.

## Walking the Wall in December





## Results of the Wonderful Word Wall

- The students showed increased interest in the dictionary and during the year graduated from *The Thorndike-Barnhardt Children's Dictionary* to *The American Heritage Dictionary*.
- Ms. Hadley noted that students showed greater interest in words, dealt with them more effectively when reading, and used them in more interesting and effective ways in their writing.
- A test given in May showed that students knew 87% of the words on the wall.

# Major Points of the Presentation

- Vocabulary is tremendously important.
- The vocabulary learning task is huge.
- Some students come to school with debilitating small vocabularies.
- Any program likely to succeed will need to be multifaceted and long term.
- When it comes to teaching individual words, one size does not fit all.

# The Multifaceted, Four-Pronged Program

- Frequent, varied, and extensive language experiences
- Teaching individual words
- Teaching word-learning strategies
- Fostering word consciousness

## The Time Needed To Accomplish It

- For students with typical vocabularies
- For students with very small vocabularies

# Some Recent Vocabulary Books

Baumann & Kame'enui. (Eds.). (2004). *Vocabulary instruction: Research to practice*. New York: Guilford.

Beck, McKeown, & Kucan. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford.

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